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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,767	12/24/2003	Makoto Shiomi	12480-000027/US	9449
30593	7590	10/19/2006	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			SHENG, TOM V	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/743,767	Applicant(s) SHIOMI ET AL.	
	Examiner Tom V. Sheng	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-9,12-18,21-24,30,31 and 35 is/are rejected.
- 7) ☒ Claim(s) 4,5,10,11,19,20,25-29 and 32-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/24/03, 4/6/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figure 11 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 29 is objected to because of the following informalities: please delete "a" before "given combinations" in line 5. Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 14 is rejected since "a program" itself is neither a process nor a manufacture. Correction to "a computer program stored in a computer-readable medium" is requested.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 6-9, 12-18, 21-24, 30, 31 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (US 2002/0140652 A1), hereinafter Suzuki.

As for claims 1 and associated claims 12-16, Suzuki teaches a method of driving a display (LCD panel 10; fig. 1), comprising the steps of:

determining a resultant value (detection signal S78) based on a first drive signal input at a first time (input image data after delay flip flop 74; page 7, paragraph 94) and a previous drive signal input at a time previous to the first time (input image data after delay flip flop 76; page 7, paragraph 94); and

modulating a second drive signal (output drive data Fo), input at a second time that is subsequent to the first time (output drive data Fo comes from display drive data generator 12 while the input image data Fie comes from edge filter 50; fig. 15A; moreover, the two delay flip flops, for the input image data Fie, are not shared with the output drive data Fo at all),

based on the determined resultant value (detection signal S78) to produce a

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corrected second drive signal for a pixel (the detection signal S78 from comparator 78 is either subtracted from or added to the output drive data Fo at add/subtract circuit 84), so as to facilitate a tone transition from the first time to the second time (the resulted output drive data is a compensated drive output data Fod, which compensates for the response characteristics of liquid crystal; page 1, paragraphs 4-7). See also fig. 16B and page 8, paragraph 95.

As for claims 2 and 17, the detection signal S78 from comparator 78 is 1 or 0 depends on whether the delayed outputs from flip-flops 74 and 76 match or not. A minute value is subtracted from or added to drive data Fo based on the detection signal S78. Thus, the detection signal of 1 represents a corrected first drive signal and a 0 represents an uncorrected first drive signal.

As for claims 3 and 18, the flip-flops 74 and 76 read on claimed storage for the current video data and previous video data.

As for claims 6-7 and 21-22, the detection signal S78 inherently depends on the combinations of delay flip-flops outputs.

As for claims 8, 23 and 30-31, since a temperature sensor 24 determines which conversion table to download from conversion table ROM to the display drive data generation unit 12, this reads on altering the correction amount based on one of temperature and video type.

As for claims 9 and 24, it is inherently to have at least one threshold for the comparison.

As for claim 35, the liquid crystal element is inherently either normally black or white when it's not driven.

Allowable Subject Matter

6. Claims 4, 5, 10, 11, 19, 20, 25-29 and 32-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: none of the prior arts of record teaches the limitations,

“the determining step further includes predicting a grayscale level reached by a pixel as a result of a grayscale level transition from previous video data of the previous drive signal to current video data of the first drive signal to correct the current video data of the first drive signal” of claim 4,

“the step of determining includes correcting the current video data so as to indicate a higher grayscale level than a grayscale level predicted as having been reached by the pixel in the grayscale level transition, if a determined grayscale level based on current video data and previous video data falls in a transition from a previous grayscale level to the current grayscale level” of claims 10 and 26,

“the previous video data and the current video data have a given combination of bit width that is set to a desired value, the desired value being smaller than twice the bit width of a next desired video data for the second drive signal, and the bit width of the previous video data is less than or equal to the bit width of the current video data; and a

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restricted bit width is stored so that the given combination of bit width assumes the desired value” of claims 11 and 25,

“the correction section further predicts a grayscale level reached by a pixel as a result of a grayscale level transition from previous video data of the previous drive signal to current video data of the first drive signal, so as to correct the current video data of the first drive signal” of claim 19,

“the correction section includes a lookup table containing grayscale levels for corrected current video data that is associated with combinations of the previous video data and the current video data; and a bit width of a grayscale level contained in the lookup table for the current video data is set to the smaller of a bit width of a grayscale level for the previous video data and a bit width of a grayscale level for the current video data” of claim 27,

“the correction section includes a lookup table containing grayscale levels for corrected current video data that corresponds to a given combinations of the previous video data and the current video data; and which contains grayscale levels indicated by the current video data in association with other combinations” of claim 29,

“the current video data and the previous video data stored in the memory have a combined bit width restricted to a given value; the control section adapted for altering bit widths of the current video data and previous video data in accordance with temperature of a pixel” of claim 32,

“the current video data and the previous video data stored in the memory section have a combined bit width restricted to a given value; and the current video data and

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the previous video data stored in the memory section bit widths are adapted to be altered in accordance with a video data type” of claim 33,

“the second driving signal is further composed of video data that is 8 bits wide for each of three primary colors; and one of the previous video data and current video data has its bit width restricted when stored in the memory, so that the previous video data and the current video data have a combined bit width of 10 bits for each one of the primary colors” of claim 34.

Claims 5, 20 and 28 are dependent on claims 4, 19 and 27, respectively.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Sheng

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", with a long horizontal stroke extending to the right.